Chapter 7
Early Asiatic Migration to the Americas: A View from South America

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7.1 Introduction

For decades, the peopling of the Americas has been one of the central subjects of American anthropology (Meltzer 2009; Willey 1985) and, beyond a few certainties and the abundance of data presently available, there are still central points of the problem that remain unresolved. The answer to yet valid questions has become even harder because the debate has been polarized by opinions that sometimes seem more like acts of faith than hypotheses based on modern scientific criteria. In this summary, we will succinctly offer an overview of the current state of discussion on this matter, seen from the perspective of South America. Under discussion will be the main ideas that have sought to explain when and how the continent was populated, and what relative degree of validation each concept enjoys today. We will lay special emphasis on the integration of data from the context of South American archaeological sites.

7.2 North America

On the basis of diverse lines of evidence (archaeological, genetic, and paleoenvironmental), little doubt exists that the arrival of the first humans to the continent took place from Siberia via the Bering land bridge (Beringia), or along its coast by a littoral or sea route (see discussion in Madsen 2004) (Fig. 7.1). This bridge was not temporally continuous but rather emerged during freezing episodes recorded during glaciations. Though exposed between around 27,000 and 11,000 ^{14}C years BP, the continental ice covering a good part of the Northern Hemisphere would have made entry into North America impractical via the interior between ca. 22,000 and 12,000 ^{14}C years BP (the opening of an Ice-Free Corridor probably occurred between ca. 12,500 and 12,000 years ^{14}C BP, see Dixon 2013) and via the Pacific coastal strip between ca. 18,000 and 15,000 years ^{14}C BP (Clague et al. 2004; Mandryk et al. 2001). Alternative hypotheses to an entry via Beringia, such as the provocative proposal of Dennis Stanford and Bruce Bradley (2013; see also Bradley and Stanford 2004), have not yet proved tenable or backed by strong evidence. Although there are some striking technological and

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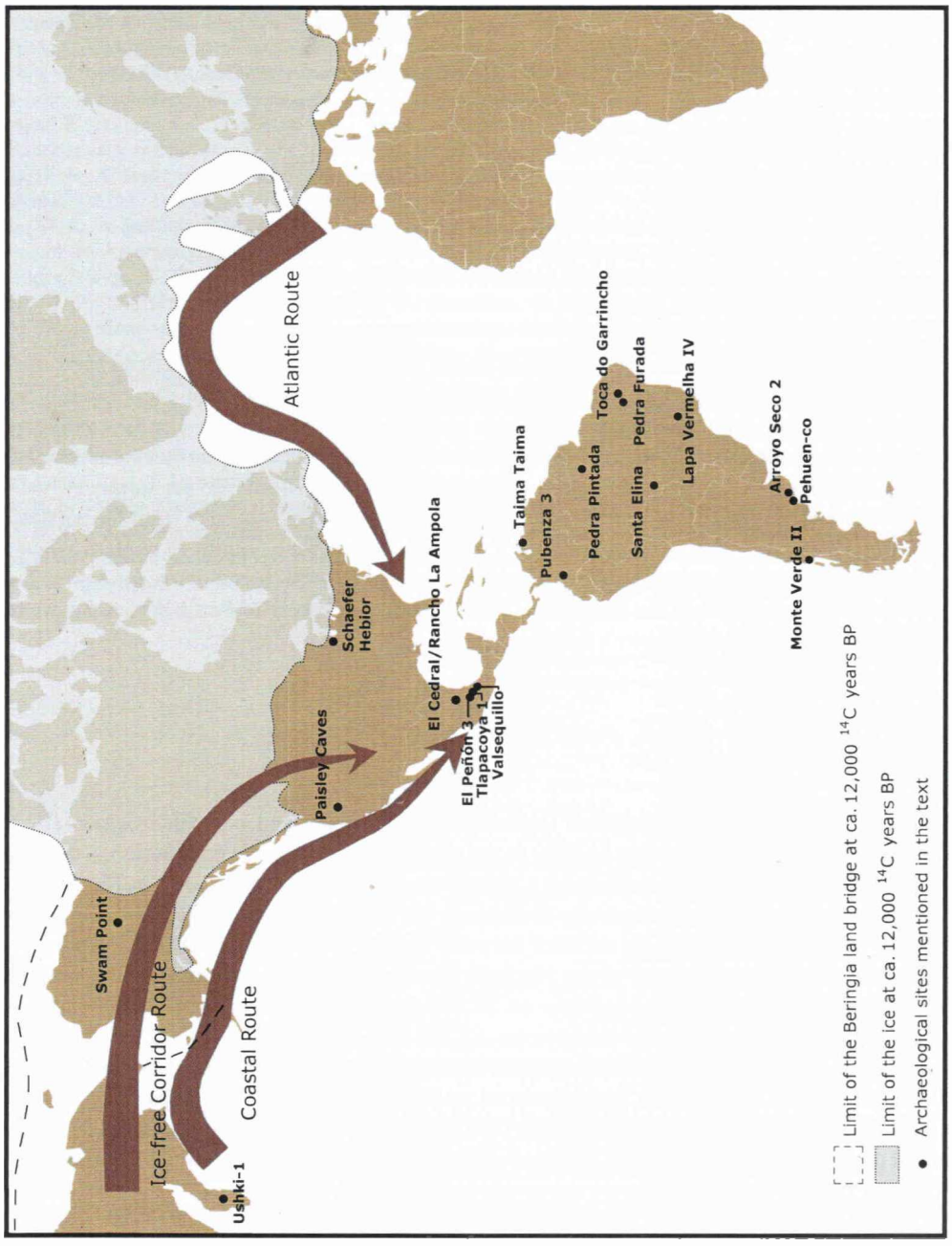

Fig. 7.1 Map showing the main archaeological sites mentioned in the text and alternative routes for entering America

morphological similarities between the Solutrean and some Clovis and Pre-Clovis artifacts, the genetic evidence does not support a European Upper Paleolithic intrusion into North America at the end of the Pleistocene (Rasmussen et al. 2014). None of the other proposed routes, from Australia and Polynesia across the Pacific, or from Africa across the Atlantic possess any serious proof to back them. This is not necessarily to deny that during the Holocene there may not have been some trans-oceanic contact with Europe, Polynesia, or Africa, but that, had such existed, it will not have been early or massive, or involved in the center scene of the initial population of the continent.

In the light of the growing archaeological data generated so far in northeast Asia and by means of simplifying the great complexity arising there, several general trends can be recognized. Central Siberia was already occupied between 30,000 and 25,000 ^{14}C years BP and, from there, Paleolithic people could have reached the Arctic region during a warm period before the Late Glacial Maximum (henceforth LGM), starting around 20,000 ^{14}C years BP. Though some authors have suggested the crossing of Beringia and entry to America took place even before the LGM (e.g., Madsen 2004), the most solid records of occupation on both sides of the intercontinental bridge show a chronology not surpassing 12,000 ^{14}C years BP had come from the Ushki-1 (Kamchatka) site in far East Asia (Goebel et al. 2010), and that of Swam Point, in central Alaska (Goebel et al. 2008). Though no undisputed evidence of occupations prior to this chronological baseline in the northwest of North America has been recorded, several sites to the south of the Laurentide Ice Sheet, in the modern United States territory, show clear evidence of occupations earlier than 12,000 ^{14}C years BP. Though we will not go too deeply into this point, the Schaefer and Hebior (Wisconsin) sites, with evidence of exploitation of proboscideans some 12,500 ^{14}C years BP (see discussion in Goebel et al. 2008) and the Paisley 5 Mile Point Caves (Oregon) site, where several coprolites were determined as belonging to *Homo sapiens*, dated at ca. 12,300 ^{14}C years BP (Thomas et al. 2008), may be mentioned. Although still controversial in some aspects, the Meadowcroft Rockshelter also has to be considered (Adovasio et al. 1998).

Shortly after these first human signals, indications appear in North America of megafauna hunters associated with Clovis technology. According to a re-evaluation of the chronology of all sites carried out by Waters and Stafford (2007), these groups dispersed throughout the greater part of present-day United States between 11,050 and 10,800 ^{14}C years BP. During that time the populating process of the Northern Hemisphere gets very complex, and humans occupied most of its territory (plains, coast, and peri-Arctic and subtropical zones), not only by hunters specializing in megafauna, such as those employing Clovis technology, but also by societies with very diverse adaptation strategies. With big-game still dominating in most subsistence scenarios of early American hunter-gatherers, some authors have argued that plants and small animals, thought to be more in purview of women's labor, played a more significant role in Paleoindian subsistence (see discussion in Kornfeld and Politis 2014).

7.3 South America

7.3.1 Controversy over an Early Peopling of the Continent

In contrast with most of North America, information on early human occupations in the south of the Northern Hemisphere is scant and in many cases still ambiguous. In the territory of present-day Mexico, there were several studies defending some pre-20,000 years old human evidence (see e.g., Mirambell 1994). Nevertheless, the accuracy of the descriptions of materials and methodologies employed for their analysis seems to be insufficient to seriously consider them proofs of an early population of America (Acosta Ochoa 2007; Politis et al. 2009). As examples, several sites such as Rancho La Ampola and El Cedral (San Luis de Potosí), Tlapacoya 1 (Mexico basin), and Valsequillo (Puebla) can be mentioned. The main problem with all these sites is the difficulty in determining whether the dated materials are the same age as the archaeological evidence recorded there and, in some cases, if this evidence is really human-generated material. In the case of Valsequillo, the presence of

human tracks on a layer of volcanic ash dating ca. 40,000 ^{14}C years BP (González et al. 2006) was also proposed. This hypothesis was criticized by a team of researchers that pointed out the age of the sediments carrying the presumed prints was more than a million years old; therefore, the idea that they might be human became untenable (Renne et al. 2005). More recently, from a morphological and morphometric study of the marks based on the biomechanical principles of walking, Morse et al. (2010:2577) concluded that "These marks no longer appear tenable as human footprints and should be dismissed from this debate."

Even taking into account that the hypothesis of a very ancient occupation of Mexico lacks empirical backing, it should be indicated that strong evidence for a para-Clovis human presence in this sector of the continent is supported. Standing out among this evidence are the human remains from 11,650±60 ^{14}C years BP found at the Naharon site, in the Yucatán peninsula (Quintana Roo) (González González et al. 2006; González González and Rojas Sandoval 2004). The dating was carried out on a woman's bone and is the most ancient direct date in the Americas. A new human skeleton from the same region was recovered from inside a cave system submerged by the rising Atlantic coast. The recent dates from the human sample from the Hoyo Negro site gave ages of 10,970±25 and 10,985±30 ^{14}C years BP (Chatters et al. 2014). These dates are also supported by a series of Uranium-Thorium dates made on calcite from the human bones. Advances in studies of this kind of site and the growing number of dates make this one of the most interesting and promising challenges for the present territory of Mexico in particular and the debate on American colonization in general.

Archaeological information from North America in general terms over-shadow that observed in South America, where there is no site that can be firmly dated as older than 13,000 ^{14}C years BP. In the cases where early dates have been proposed, associations are not clear enough, nor have they been conclusively validated. Even so, there are some sites reserved as interesting candidates to go beyond this chronological barrier, but these sites require a greater degree of chronological and contextual resolution and greater detail in the publication of basic data. One of these is Pedra Furada (Parenti 2001), where the most recent research on lithic technology and chronology (Boëda 2010) attempts to solve some of the inconsistencies mentioned by different researchers regarding the natural processes in the formation of the site (e.g., Borrero 1995; Meltzer et al. 1994). Despite the publication of Parenti's (2001) thesis, and of several articles by Guidón and his team, the site must still be published in greater detail so as to better evaluate the conditions of the find. Other candidates, which require additional information, are the sites of Pubenza 3, on the Magdalena River in Colombia, and the Santa Elina shelter, in Mato Grosso State, Brazil. As for the first, Correal Urrego et al. (2005) made public megafaunal remains associated with artifacts with supposed evidence of use dated to ca. 16,000 ^{14}C years BP. As for the latter, two very ancient levels were found with remains of a ground sloth (*Glossotherium*) associated with some lithics with chronologies between 22,000 and 27,000 ^{14}C years BP (Vilhena Vialou 2005). If either of these sites effectively managed to provide reliable dates presented for human occupations of their deepest levels and were better able to defend the contextual associations, we would then seriously have to consider an arrival chronology predating the LGM, in other words over 18,000 ^{14}C years BP. The last site which arrived into this discussion is Arroyo del Vizcaino, Uruguay (Fariña et al. 2014). In this site, possible cut-marked megafaunal bones dated to ca. 29,000 ^{14}C years BP were recovered in association with a few lithics flaked by humans. This possibility remains open, but awaits stronger arguments and a better understanding of the site formation process in order to be validated.

7.3.2 South American Occupation: 12,000–13,000 ^{14}C Years BP

The most ancient dates with the greatest degree of confidence in South America go back to the time period between 12,000 and 13,000 ^{14}C years BP. The main ones are from the sites of Monte Verde, in the south of Chile (Dillehay 1989, 1997, 2000), and Arroyo Seco 2, in the Argentine Pampa region

(Steele and Politis 2009; Politis et al. 2014). There are additional pre-12,000 ^{14}C years BP-dated sites, which could be added here; however, their chronologies and contexts still present weaknesses needing to be resolved so as to be fully incorporated into the debate on early peopling. Among these are Taima Taima in northwest Venezuela (Ochsenius and Gruhn 1979), Lapa do Boquete (Fogaça 2001), Toca do sitio do Meio (Guidon 1986), and Toca do Garrincho (Guidon et al. 2000) in Brazil (see discussion in Bueno et al. 2013), and Pehuen-co on the coast of the Pampas in Argentina (Bayón et al. 2011). Here we will briefly refer to the last two, as well as Monte Verde and Arroyo Seco 2.

The Pehuen-co site today is on the Pampean coast, but during the Late Pleistocene was hundreds of km into the continent (see evolution of the coast line in Fig. 7.2). This site was on the shores of a temporary Pampas pond in the Late Pleistocene and shows an exceptional record of animal footprints and tracks on a sediment platform extending 5,000 m along the modern coast (Manera de Bianco et al. 2008). The process of sedimentation and animal trampling repeated quite regularly, each after a short period of time, generating overlapping layers. The palaeoichnological record shows more than 100 trackways and hundreds of isolated footprints of different ichnogenra including Megatheridae, Mylodontidae, Glyptodontidae, *Macrauchenia*, Camelidae cf. *Hemiauchenia, Lama*, Equidae, *Stegomastodon*, Carnivora (Ursidae, Canidae, Felidae), and Caviidae. One sample of organic matter coming from the middle levels of the sedimentary layers containing the footprints of Pleistocene fauna gave an age of 12,000 ± 110 ^{14}C years BP, and a new set of radiocarbon sampling of the site is currently in process by Thomas Stafford Jr. This kind of novel record is a valuable source in the study of available fauna during the early period of human occupation of the Pampa region. In addition to the megafaunal record, in 2005 two isolated human footprints and a trackway were found at the same site (Bayón et al. 2011). The footprints were found on large pieces of clayey sediment, separated from the original layer by the tide; and the track is composed of 13 consecutive footprints, with alternating traces of the right and left foot, as in a walking situation and, hence, they may correspond to only one individual (Bayón et al. 2011; see Fig. 7.3). It seems that what is left is the undertrack since the upper layers have been eroded by the sea (see Marty et al. 2009; and the "undertrack model" in Fig. 7.3c). In the same layer, there is a parallel *Megatherium* trackway also containing *Macrauchenia*, Artiodactyla, and flamingo trackways crossing the human one in different directions. Though the human footprints have not been studied in depth owing to the fact that they are permanently buried by the sand of the present-day inter-tidal zone, this site is an extremely relevant record for a future research agenda.

At Toca do Garrincho several *Homo sapiens* remains (a fragment from the fronto-parietal region of the cranium, a fragment of a jaw with the first molar, and an isolated tooth) "with archaic features" were discovered (Peyre et al. 2009). A conventional radiocarbon date was obtained from these remains at ca. 12,200 ^{14}C years BP (Guidon et al. 2000). However, the date is on carbon from the acid pretreatment washes of a composite sample of two human teeth, which produced insufficient collagen for dating after pretreatment (Bueno et al. 2013). Guidon et al. (2000) report this result, commenting that readers can then make their own judgment; therefore, this date requires a bit of caution.

The best known and most accepted pre-12,000 ^{14}C years BP site in South America is without doubt that of Monte Verde in southern Chile. This site has been published in detail in several articles and books (e.g., Dillehay 1989, 1997). At Monte Verde II, discoveries include: hearths; the foundations of wooden leather-covered dwellings; mastodon remains; and a great variety of wood and plants remains. In a more recent publication on the site, the discovery of several species of marine algae dated at ca. 12,300 ^{14}C years BP (Dillehay et al. 2008) was also made known. The remote provenance of this aquatic resource and the impossibility of its having entered the context through non-human agency validate its anthropic genesis even further. The chronology of the site has been established at ca. 12,400 ^{14}C years BP by averaging 16 dates from the same component. What is interesting about Monte Verde II, besides its confrontation with the "Clovis First" model, is that it suggests that the human groups that occupied it had an economy focused on the exploitation of a great diversity of animal and plant resources, a very different pattern from that of specialized hunters connected with Clovis technology.

In the Pampa region, there is a human signal, although it is still weak, at the Arroyo Seco 2 site (130 km northeast from Pehuen-co). At this site, some Pleistocene mammals were dated (see Fig. 7.4);

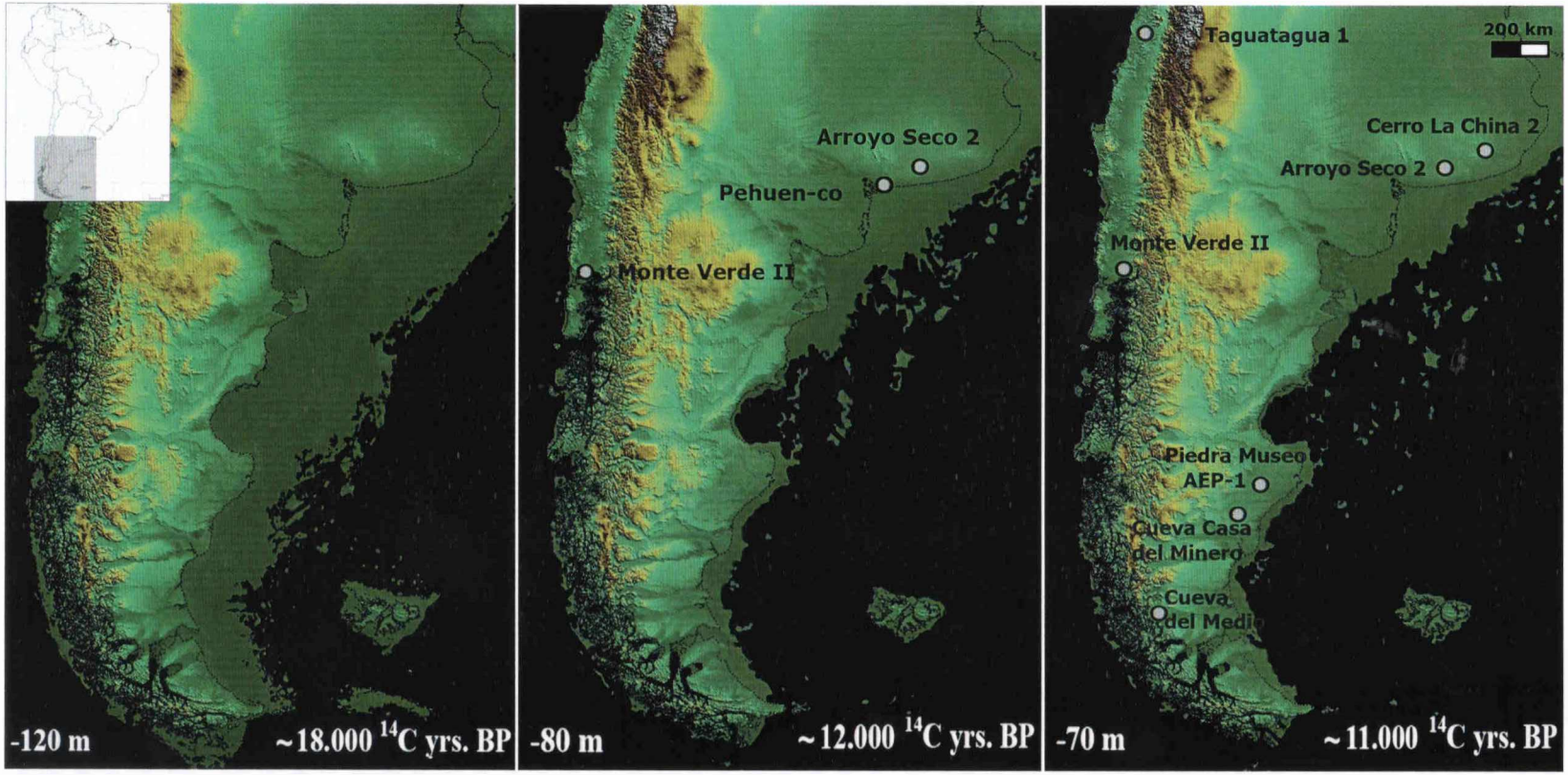

Fig. 7.2 Map showing the changes of the coast line in southern South America during the Late Pleistocene—main sites per period are also indicated

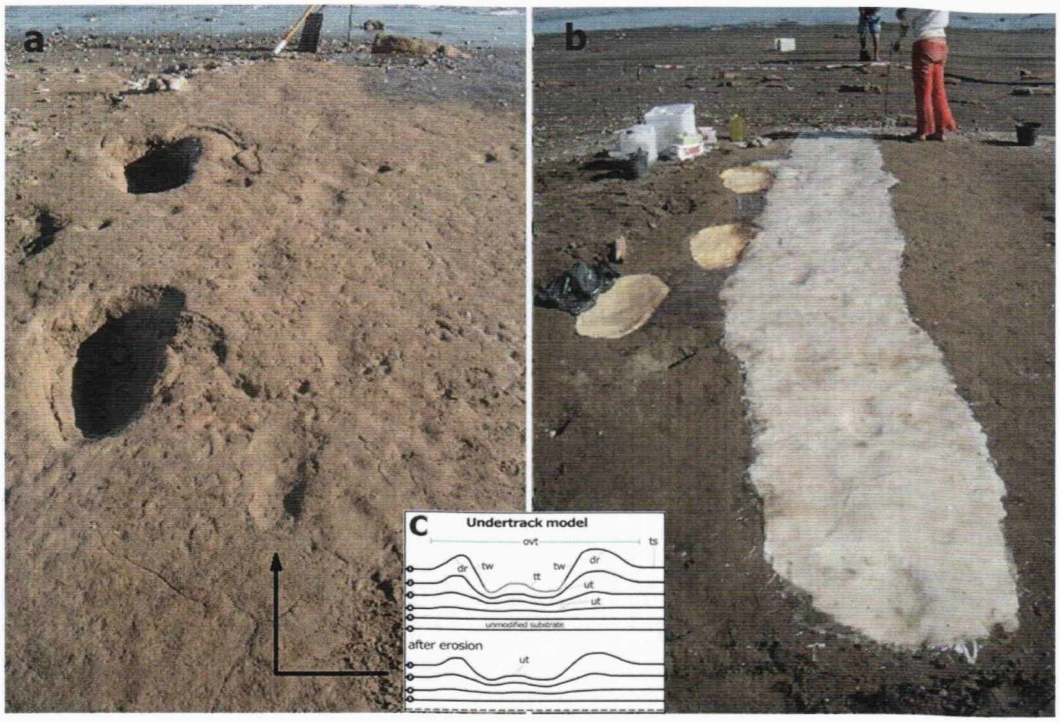

Fig. 7.3 Photos showing the human trackway of Pehuen-co site. (**a**) Trackway as it was exposed in 2005 (**b**) Cast of the trackway taken by Manera and her team (**c**) Undertrack model before and after erosion (taken from Marty et al. 2009). Photos (**a**) and (**b**) courtesy of Teresa Manera

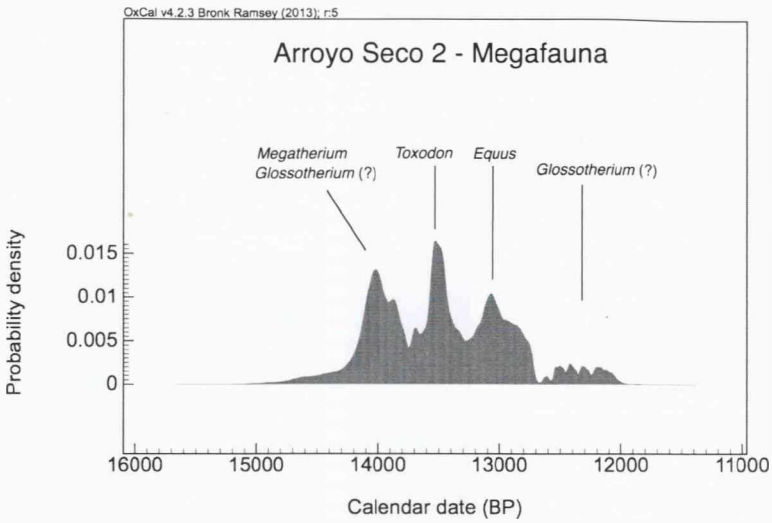

Fig. 7.4 Sum of probabilities of the Late Pleistocene ^{14}C dates from Arroyo Seco 2, based on 14 dates (taken from Politis et al. 2014)

Megatherium and *Equus* bones have some evidence of human processing (fresh bone fractures) and were associated with stone tool use, to ca. 12,200 ^{14}C years BP (Steele and Politis 2009; Politis et al. 2014). Another dating on a *Toxodon* bone was estimated at 11,750 ^{14}C years BP, although in this case no human action was verified. Finally, a third event was dated to ca. 11,200 ^{14}C years BP, involving two equids present in the Late Pleistocene: *Equus* and *Hippidion*. This event exhibits more clear evidence of human agency (Gutiérrez 2004; Politis et al. 2014). It is important to highlight that the fauna of Arroyo Seco 2,

dated to the end of the Pleistocene, also include other genera, such as *Glossotherium* and Camelidae cf. *Hemiauchenia*, all of which were also represented in the Pehuen-co Pleistocene paleoichnological site (Manera de Bianco et al. 2008), suggesting that both sites show a similar faunal composition, but in different kinds of records.

Though the scarcity and great geographical distribution of the archaeological signal in South America may indicate a low density of occupation and a newly arrived people in a new continent, the evidence from Monte Verde II suggests a more complex picture: populations established during lengthy periods in a single spot, with a fairly wide ranging knowledge of the environment and its resources. However, the kind of life proposed for the inhabitants of Monte Verde has not been found in any other Late Pleistocene site in the Americas. The closest might be the case of the Monte Alegre (Brazil), at which, beyond some discussions as to its chronology (see Fiedel 1996), a strong emphasis was recorded on the exploitation of the Amazonian forest (above all, fruits, seeds, small vertebrates, and mollusks) some 11,000 ^{14}C years BP (Roosevelt et al. 1996; and discussion in Bueno et al. 2013).

Except for the evidence of human presence at Monte Verde, Arroyo Seco, Pehuen-co, and Toca do Garincho, no archaeological evidence has been recorded from before 11,000 ^{14}C years BP, when the number of sites multiplies and there are already indications of human occupation in most South American environments. In the Southern Cone, several occupations were reported in Pampa-Patagonia for this period: Arroyo Seco 2 (Politis et al. 2014), Cerro La China 2 (Flegenheimer 1987), Cerro de los Burros (Meneghin 2005), Cerro Tres Tetas (Paunero 2003), Piedra Museo AEP-1 (Salemme and Miotti 2008), and Cueva del Medio (Nami and Nakamura 1995), and also from central and southern Chile: Los Rieles and Taguatagua 2 (Jackson et al. 2012; Núñez et al. 1994, see Fig. 7.2). The same trend can be observed in other parts of South America, for example, the central coast of Perú and northern Chile: El Palto CA-9-89 (Dillehay 2011), Quebrada Jaguay 280 (Sandweiss et al. 1998), Amotape PV-8-29, (Rademaker et al. 2013), and Quebrada Santa Julia (Jackson et al. 2007; Méndez 2013), and the savannahs and tropical forests of Brazil: Lapa do Dragao and Lapa do Boquete (Bueno et al. 2013; Prous 1986; Prous et al. 1996/1997). The diversity of environments, adaptations, and technologies from these sites strengthens the idea that there were already people inside the continent before 11,000 ^{14}C years BP, as it would be hard to explain such a rapid demographic expansion and an adaptation to such diverse environments. An intense archaeological signal is clearly detected after 11,000 ^{14}C years BP and a subsequent expansion from around 10,700 ^{14}C years BP, which may have been associated with a new technology that included, among other artifacts, the fishtail projectile point (see recent revisions in Castiñeira et al. 2011 and Nami 2013; also see Chap. 5). This projectile point in the South American Southern Cone is characteristic of a period within the early American settlement generally associated with Pleistocene faunal exploitation (Fig. 7.5).

Fig. 7.5 Cast of a fishtail projectile point from Cerro La China (Pampas, Argentina). Courtesy of Nora Flegenheimer

7.3.3 South America After 10,000 ^{14}C Years BP

One millennium later, most of the major American regions were already occupied by indigenous groups that diversified their life modes and adapted to very different conditions. This efficient regional adaptation by Late Pleistocene and early Holocene hunter-gatherers has led Dillehay et al. (2003) to propose that this might be partially explained by the early emergence in South America of an incipient socio-economic complexity. This early complexity will have provided the conditions for a series of revolutionary changes that came about shortly after, and which substantially transformed these societies. The said changes included cultigens in Peru, perhaps some 8,000 years ago, pottery production at least 6,000 years ago in some spots of Colombia, Ecuador, and probably Brazil, the development of human body mummification some 7,000 years ago in northern Chile, and the beginning of monumental architecture in Ecuador and Peru around 5,000 years BP.

7.4 Peopling of the Americas: Other Lines of Evidence

As a complement to archaeological information but with ever-increasing inherent force, biological information of present-day and pre-European populations has gradually clarified certain topics pertaining to the peopling of the Americas. In the first place, genetic evidence clearly shows American populations to be of Asiatic origin, probably from the middle of Asia (Fagundes et al. 2008; Schurr 2004; Schurr and Sherry 2004; see also Chap. 4). This evidence also indicates that biological differentiation among populations was probably a local phenomenon and not the result of multiple migrations (with the probable exception of Aleutian-Eskimo groups) (Merriwether et al. 1995; Perez et al. 2009). However, biological evidence is weaker when considering the moment the first humans arrived in the Americas. Though some of the latest estimates (for instance Silva et al. 2002) regarding the time of arrival agree with archaeological information, it is clear additional studies are still necessary in order to offer a greater degree of resolution.

Mitochondrial DNA (mtDNA) studies of present-day populations have had a profound influence on our vision of the earliest indigenous American population (Fagundes et al. 2008; see Chap. 4 for a more detailed discussion). Even though limitations exist in the exclusive use of genetic data of contemporary populations in assessing the evolutionary history of early Americans, ancient DNA (aDNA) studies have proved to be very useful in evaluating models generated on the basis of modern mtDNA. Notwithstanding, these studies are still limited in number and, principally, the remains from the end of the Pleistocene that have been analyzed are scarce (Chatters et al. 2014). This obscures the mitochondrial variation of this crucial period, clouding our understanding of the origin and evolution of the earliest human populations in the Americas. It is necessary to count on a greater store of aDNA information from the end of the Pleistocene and early Holocene so as to arrive at a better understanding of the variation and evolutionary history of the first Americans.

Similarly, and as several authors have made clear, craniofacial morphological evolution in the Americas is a problem requiring greater research (Perez et al. 2009; Powell and Neves 1999; Chap. 8). Available samples from the LGM to date cannot be used to study the craniofacial morphological characteristics of the first American people (those of the end of the Pleistocene). If we accept that the earlier occupations occurred some 14,000 or 15,000 years ^{14}C BP, the most studied skeletons from Lagoa Santa and Tequendama (dated between 9,000 and 6,000 years ^{14}C BP) belong to populations that inhabited South America some 7,000–5,000 years after the entry of the first settlers. The analysis of these sites, together with others from the same time (such as Arroyo Seco 2 and Baño Nuevo), only allows us to address craniofacial variation in the early/mid Holocene of South America. Due to the elapsed time since the initial peopling of the continent, the causes of the craniofacial morphological variation of these people could be discussed in light of microevolutionary factors acting locally during

the initial millennia of settlement. In this sense, if we make use of craniofacial morphological evidence for the study of the American peopling process, we must consider some characteristics of the factors that caused the cranco-skeletal traits so as to correctly interpret results. Craniofacial morphological differences between the two different populations can be the result of the action of factors like natural selection or genetic drift on inherited variation (Perez et al. 2009; Powell and Neves 1999). Additionally, craniofacial morphology can vary due to the action of environmental factors that produce non-inheritable modifications during an individual's development (called phenotypic plasticity). Thus, natural selection and phenotypical plasticity could generate morphological similarities between two early American populations, or an American and a non-American existing in similar environmental contexts, but having no close genetic relationship. This situation could lead to an erroneous interpretation of morphological similarities between two populations if it is assumed they only represent relatedness, that is, evolutionary relations (Perez and Monteiro 2009).

The problems presented by morphological information in the study of American settlement can be illustrated if we think of the peopling of southern South America. The study of evolutionary relationships among human populations in this region was, until recently, limited to morphological data. However, at the beginning of 2000, a mitochondrial DNA study published by Moraga et al. (2000) showed that all the sequences obtained in southern Patagonia and Tierra del Fuego are easily ascribed to the C and D Amerindian haplogroups (similar results were obtained by Garcia-Bour et al. 2004). So, the available genetic information indicates that craniofacial morphological differences observed between the populations of Tierra del Fuego, southern Patagonia, and the remainder of the early American populations have arisen locally and are not related to the retention of ancestral morphological characters and geographical isolation of the populations of Tierra del Fuego, as has frequently been supposed (see a wider discussion of this matter in Perez et al. 2007).

7.5 Conclusion

To sum up, and considering palaeoenvironmental, bioanthropological, and archaeological evidence, it becomes clear that the model called Clovis-First irremediably tends to be discarded as an explanation of the initial entry of human societies in America, not only because there are already trustworthy traces of previous occupations, but because the variability and spatial distribution of groups contemporary with and immediately later than Clovis are extremely high. In addition, this model has as one of its main substantiations the premise of a highly rapid dispersion of the "Clovis people," in which case their correlates should be found in Siberia, something that has not happened so far.

So then, given that there were already humans in the Americas before Clovis, the question is: when did they arrive? Although it is not possible to give a definitive answer to this, in principle it is quite unlikely this could have happened between 18,000 and 15,000 ^{14}C years BP as the continental ice would not have allowed it, even along a littoral route (Clague et al. 2004; Mandryk et al. 2001). Neither can an arrival prior to the period 25,000–18,000 ^{14}C years BP be dismissed, as proposed by Davis Madsen (2004), but for now no solid, absolutely reliable evidence exists to support this. Therefore, the most parsimonious hypothesis proposes a slightly later arrival, possibly ca. 15,000 ^{14}C years BP. If it actually happened this way, the passage must have been made along the littoral of the south of Beringia and northwest North America, the only free space of continental ice until the opening up of the Alberta corridor some 11,500 ^{14}C years BP (as was initially proposed by Fladmark [1979] and later seconded by other researchers such as James Dixon, Darly Fredje, George Wisner, among many others). At the same time, this implies that a good number of sites generated by these first immigrants are presently under the ocean.

In the case of the Southern Hemisphere, the first human evidence (e.g., Monte Verde and Arroyo Seco 2) predates the earliest Clovis signal (Waters and Stafford 2007). Nevertheless, it also clearly

emerges that there are no reliable sites more than a few millennia earlier than Clovis (see Bueno et al. 2013; López Mazz 2013; Méndez 2013; Prates et al. 2013; Rademaker et al. 2013), which also agrees with a pre-Clovis but post-LGM entering. If this is so, the spread of fluted projectile point technology in this part of the continent, with an age around 11,000–10,000 BP (Castiñeira et al. 2011; Prates et al. 2013, and probably somewhat earlier, Nami 2013), must have been associated with a second pulse of peopling, probably through the Ice-Free Corridor (Pitblado 2011).

An age of ca. 15,000 ^{14}C years BP for the first migration pulse coincides with certain models based on mtDNA proposing that the initial differentiation of indigenous American haplogroups will have occurred about 20,000–15,000 ^{14}C years BP (Fagundes et al. 2008; Schurr and Sherry 2004; Silva et al. 2002) and approaches closely the chronology of 13,500 ^{14}C years BP proposed by Kemp et al. (2007) on the basis of the ancient mtDNA study. In addition, there is concordance with some suggestions based on craneometric studies, such as those by Neves and Pucciarelli (see for example Pucciarelli 2004) on the entry of a first paleo-American population between 20,000 and 15,000 ^{14}C years BP. Finally, a date of ca. 15,000–14,000 ^{14}C years BP also coheres with chronology available for the early sites in Siberia.

To round off this synthesis about the origins of American indigenous people, we must conclude that, just as with so many other subjects of contemporary archaeology and anthropology, we are still far from a final answer. The signal of the human presence in South America before the LGM is still weak and intermittent. It could be the expected demographic signal for a low population density in a situation of reconnaissance, resulting in isolated bands with high mobility and the lack of production of dense archaeological deposits (see for example Salcedo Camacho 2014). Or, on the contrary, this weak signal could be simply a false signal produced by natural processes, which would mimic human activity. Currently, the last possibility seems to be most probable but the former cannot be ruled out.

We presently propose that the first humans arrived on the northern continent from the northeast Asian some time at the end of the Pleistocene, approximately 15,000 or 14,000 ^{14}C years BP. A short time later they had already reached South America. We also know they were *Homo sapiens*, anatomically modern humans, and that they had a hunter-gatherer lifestyle, highly nomadic, and maybe deeply interested in knowing what there was beyond. Their immense exploratory curiosity, the demographic growth of the bands generation after generation, and their flexible capacity of adaptation allowed them to colonize in just a few millennia every corner of the southern continent, from the high Andean punas down to the cold and windy channels of the south Atlantic. In time they adopted diverse ways of life. Some of them produced transcendental technological innovations such as pottery, metallurgy, monumental architecture, and astronomy. They also domesticated an great variety of plants, which after the sixteenth century, helped change the diet of the whole of humanity. Maize, tomatoes, potatoes, pumpkin, beans, cacao, peanuts, and many other vegetables were American products that have had an enormous impact on the nutrition of the whole world. This, among much else, was the legacy of those human beings from Asia all those thousands of years ago, who arrived to explore and inhabit a world that was wide and alien to them.

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